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09/487,405    01/18/00    SINGH KHANUJA

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EXAMINER

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LADAS & PARRY  
26 WEST 61ST STREET  
NEW YORK NY 10023

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CHAKRABARTI, A

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.  
09/487,405

Applicant(s)  
Khanuja

Examiner  
Arun Chakrabarti

Art Unit  
1655



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Oct 5, 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-13 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Specification*

1. Claims 1-5 have been canceled and new claims 6-13 have been added.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 6-7 and 10-13 are rejected under 35 U.S. C. 103 (a) over Sondahl et al. (U.S. Patent 5,436, 395) (July 25, 1995) in view of Gilbert et al (U.S. Patent 6,187,999 B1) (February

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13, 2001) further in view of Jones et al. (Journal of Economic Entomology, (1979), Vol. 72, pages 628-632).

Sondahl et al teach a novel screening method useful for identifying an insect tolerant genotypes or clones (Abstract, Column 5, lines 39-52 and Column 11, lines 36-38 and Column 14, lines 40-41), the method comprising the steps of :

a) detecting molecular variation of somaclones in vitro (Abstract, Column 5, lines 39-52 and Column 11, lines 36-38 and Column 14, lines 40-41, Figure 1 and Examples 2, 9 and 10 and Column 6, lines 24-49);

b) selecting the somaclones having molecular variation (Figure 1 and Examples 9 and 10 and Column 6, line 50 to column 7, line 22);

c) exposing somaclones to different conditions (Column 7, lines 23-47); and

d) identifying the surviving somaclones (Column 7, line 48 to column 8, line 2).

Sondahl et al teach a novel screening method wherein the plants are raised by somacloning (Abstract and Column 5, lines 39-52).

Sondahl et al teach a novel screening method wherein the insect tolerant trait of the plant may cover insect pests which feed on the foilage of the plant (Column 11, lines 36-38).

Sondahl et al teach a novel screening method wherein the clones could be generated vegetatively, tissue culture, glass house or in field by asexual reproduction method (Column 5, lines 39-52 and Column 7, line 48 to Column 8, line 2).

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Sondahl et al do not teach the checking for the stability at molecular level through RAPD among plant clones of larger population.

Gilbert teaches the checking for the stability at molecular level through RAPD among plant clones of larger population. (Column 5, lines 45-52).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the checking for the stability at molecular level through RAPD among plant clones of Gilbert with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al. since Gilbert states, "There are many techniques available for the analysis, comparison and characterization of plant genotype and these include isozyme electrophoresis, restriction fragment length polymorphism and randomly amplified polymorphic DNAs (RAPDs) (Column 5, lines 45-52)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". An ordinary practitioner would have been motivated to substitute and combine the checking for the stability at molecular level through RAPD among plant clones of Gilbert with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al. in order to achieve express advantages, as noted by Gilbert, of techniques available for the analysis, comparison and characterization of plant genotype and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to

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the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype .

Sondahl et al in view of Gilbert et al do not teach exposing the somaclones to insect larvae or nymph to check for insect larval non-preference.

Jones et al. teach forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference. (Abstract, Tables 2 and 3 and Page 631, Column 2, second paragraph).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference of Jones et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert, since Jones et al. state, "The screening test results show that both insect non-preference and plant tolerance contribute to the resistance expressed among the soybean genotypes (Page 631, Column 2, second paragraph)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". An ordinary practitioner would have been motivated to substitute and combine the forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference of Jones et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert in

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order to achieve express advantages, as noted by Jones et al., of the screening test results which show that both insect non-preference and plant tolerance contribute to the resistance expressed among the plant genotypes and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype.

4. Claims 6-7 and 9-13 are rejected under 35 U.S. C. 103 (a) over Sondahl et al. (U.S. Patent 5,436, 395) (July 25, 1995) in view of Gilbert et al (U.S. Patent 6,187,999 B1) (February 13, 2001) further in view of Jones et al. (Journal of Economic Entomology, (1979), Vol. 72, pages 628-632) further in view of Prajapati et al. (Phytotherapy Research, (1998), Vol. 12, pages 270-274).

Sondahl et al in view of Gilbert et al. further in view of Jones et al teach method of claims 6-7 and 10-13 as described above.

Sondahl et al in view of Gilbert et al. further in view of Jones et al do not teach the insect larvae *Spilarctica obliqua*.

Prajapati et al teach the insect larvae *Spilarctica obliqua* (Abstract and Materials and Methods and Figure 1).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the insect larvae *Spilarctica obliqua* of Prajapati et al. with the novel method of induction and selection of somaclonal variation in plants

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of Sondahl et al in view of Gilbert further in view of Jones et al, since Prajapati et al. state, "Five fractions from the root of the common periwinkle were evaluated for their antifeedant activity, growth regulatory potential, and effect on fecundity and fertility against various stages of a lepidopterous insect, *Spilarctica obliqua* (Abstract, first sentence)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". An ordinary practitioner would have been motivated to substitute and combine the insect larvae *Spilarctica obliqua* of Prajapati et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert further in view of Jones et al., in order to achieve express advantages of an insect larvae, as noted by Prajapati et al., which can provide the evaluation of a new hybrid plant for their antifeedant activity, growth regulatory potential, and effect on fecundity and fertility against various stages of a lepidopterous insect, *Spilarctica obliqua* and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype.



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5. Claims 6-8 and 10-13 are rejected under 35 U.S. C. 103 (a) over Sondahl et al. (U.S. Patent 5,436, 395) (July 25, 1995) in view of Gilbert et al (U.S. Patent 6,187,999 B1) (February 13, 2001) further in view of Jones et al. (Journal of Economic Entomology, (1979), Vol. 72, pages 628-632) further in view of Kumar et al. (U.S. Patent Plant 5,898,001) (April 27, 1999).

Sondahl et al in view of Gilbert et al. further in view of Jones et al teach method of claims 6-7 and 10-13 as described above.

Sondahl et al in view of Gilbert et al. further in view of Jones et al do not teach the insect tolerant mint plant *Mentha arvensis*.

Kumar et al teach the insect tolerant mint plant *Mentha arvensis* (Example 1 and Column 3, lines 1-11 and Table 1).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the insect tolerant mint plant *Mentha arvensis* of Kumar et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert further in view of Jones et al, since Kumar et al. state, "Japanese mint (*Mentha arvensis*) is an economically important mint species since it contains a very high content of menthol and mint oils (Example 1, Column 14, lines 50-52)". Moreover, Kumar et al state, "This is potentially very useful in plant biotechnology for micropropagation, selecting variants and genetic transformation. Further, the invention also provides an improved process for exchange and conservation of disease free mint germplasm. The process of this invention is very simple and is applicable to a wide range of varieties and species of genus

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Mentha. The process also provides a simple method to alter the composition of essential oil in Mentha plants (Column 7, lines 52-59).” Moreover, Sonadahl et al state, “In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)”. An ordinary practitioner would have been motivated to substitute and combine the insect tolerant mint plant Mentha arvensis of Kumar et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert further in view of Jones et al., in order to achieve express advantages of a program, as noted by Kumar et al., to study Japanese mint (Mentha arvensis), which is an economically important mint species since it contains a very high content of menthol and mint oils and also to get advantages of an invention that is potentially very useful in plant biotechnology for micropropagation, selecting variants and genetic transformation and which also provides an improved process for exchange and conservation of disease free mint germplasm and which is very simple and is applicable to a wide range of varieties and species of genus Mentha and which also provides a simple method to alter the composition of essential oil in Mentha plants and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype.

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***Response to Amendment***

6. In response to amendment, all 112 (second paragraph) rejections are hereby withdrawn. However, two new 103 (a) rejections have been included.

***Response to Arguments***

7. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that there is no motivation to combine the references. This argument is not persuasive, especially in the presence of strong motivations provided by Sonadahl et al as Sonadahl et al. state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". Similar logic is applicable to Gilbert reference as Gilbert states, "There are many techniques available for the analysis, comparison and characterization of plant genotype and these include isozyme electrophoresis, restriction fragment length polymorphism and randomly amplified polymorphic DNAs (RAPDs) (Column 5, lines 45-52)". Similar types of strong motivations are provided by other references cited, which urge an ordinary practitioner to combine the references.

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In view of the response to argument, one previous 103 (a) rejection is maintained and two new 103 (a) rejections have been included in response to amendments.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D. whose telephone number is (703) 306-5818. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196. Papers related to this application may be submitted to Technology

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Center 1600 by facsimile transmission via the P.T.O. Fax Center located In Crystal Mall 1. The CM1 Fax Center numbers for Technology Center 1600 are either (703) 305-3014 or (703) 308-4242. Please note that the faxing of such papers must conform with the Notice to Comply published In the Official Gazette, 1096 OG 30 (November 15, 1989).

Arun Chakrabarti

Patent Examiner

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October 15, 2001

  
W. Gary Jones  
Supervisory Patent Examiner  
Technology Center 1600